

What is claimed is:

1. Apparatus for analyzing an audio signal with regard to rhythm information of the audio signal by using an 5 autocorrelation function, comprising:

means for dividing the audio signal into at least two sub-band signals;

10 means for examining at least one sub-band signal with regard to a periodicity in the at least one sub-band signal by an autocorrelation function, to obtain rhythm raw-information for the sub-band signal, wherein a delay is associated to a peak of the autocorrelation function;

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means for postprocessing the rhythm raw-information for the sub-band signal determined by the autocorrelation function, to obtain postprocessed rhythm raw-information for the sub-band signal, so that in the postprocessed rhythm raw-information an ambiguity in an integer plurality of a 20 delay, to which an autocorrelation function peak is associated, is reduced, or a signal portion is added at an integer fraction of a delay, to which an autocorrelation function peak is associated; and

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means for establishing the rhythm information of the audio signal by using the postprocessed rhythm raw-information of the sub-band signal and by using another sub-band signal of the at least two sub-band signals.

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2. Apparatus according to claim 1, wherein the means for postprocessing comprises:

means for calculating a version of the rhythm raw-information of a sub-band signal spread by an integer 35 factor; and

means for subtracting the version of the rhythm raw-information of the sub-band signal spread by an integer factor larger than one, or a version of the rhythm raw-information of the sub-band signal derived from this

5 version, to obtain the postprocessed rhythm raw-information for the sub-band signal.

3. Apparatus according to claim 2, wherein means for subtracting is disposed to perform, prior to subtracting, a 10 weighting of the spread version with a factor between zero and one, to generate the derived version.

4. Apparatus according to claim 1, wherein means for postprocessing comprises:

15 means for calculating a version of the rhythm raw-information compressed by an integer factor larger than one; and

20 means for adding the compressed version of the rhythm raw-information of the sub-band signal or a version derived therefrom to the rhythm raw-information of the sub-band signal, to obtain the postprocessed rhythm raw-information for the sub-band signal.

25 5. Apparatus according to claim 4, wherein the means for adding is disposed to perform, prior to adding, a weighting of the compressed version of the rhythm raw-information by a factor between zero and one, such that a weighted 30 compressed version of the rhythm raw-information is added to the rhythm raw-information of the sub-band signal to generate the derived version.

6. Apparatus according to claim 1, further comprising:

35 means for evaluating a quality of the periodicity of the postprocessed rhythm raw-information, to obtain a significance measure for the sub-band signal,

wherein means for establishing is further disposed to establish the rhythm information of the audio signal by considering the significance measure of the sub-band signal.

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7. Method for analyzing an audio signal with regard to rhythm information of the audio signal by using an autocorrelation function, comprising:

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dividing the audio signal into at least two sub-band signals,

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examining at least one sub-band signal with regard to a periodicity in the at least one sub-band signal by an autocorrelation function, to obtain rhythm raw-information for the sub-band signal, wherein a delay is associated to a peak of the autocorrelation function;

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postprocessing the rhythm raw-information for the sub-band signal determined by the autocorrelation function, to obtain postprocessed rhythm raw-information for the sub-band signal, so that in the postprocessed rhythm raw-information an ambiguity in the integer plurality of a delay, to which an autocorrelation function peak is associated, is reduced, or a signal portion is added at an integer fraction of a delay, to which an autocorrelation function peak is associated; and

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establishing the rhythm information of the audio signal by using the postprocessed rhythm raw-information of the sub-band signal and by using a further sub-band signal of the at least two sub-band signals.

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35 8. Apparatus for analyzing an audio signal with regard to rhythm information of the audio signal by using an autocorrelation function, comprising:

means for examining the audio signal with regard to a periodicity in the audio signal, to obtain rhythm raw-information for the audio signal, wherein a delay is associated to a peak of the autocorrelation function;

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means for postprocessing the rhythm raw-information for the audio signal determined by the autocorrelation function, to obtain postprocessed rhythm raw-information for the audio signal, so that in the postprocessed rhythm raw-information a signal portion is added at an integer fraction of a delay, to which an autocorrelation function peak is associated; and

15 means for establishing rhythm information of the audio signal by using the postprocessed rhythm raw-information of the audio signal.

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9. Apparatus for analyzing an audio signal with regard to rhythm information of the audio signal by using an 20 autocorrelation function, comprising:

means for examining the audio signal with regard to a periodicity in the audio signal, to obtain rhythm raw-information for the audio signal, wherein a delay is 25 associated to a peak of the autocorrelation function;

means for postprocessing the rhythm raw-information for the audio signal determined by the autocorrelation function, to obtain postprocessed rhythm raw-information for the audio 30 signal, by subtracting a version of the rhythm raw-information weighted by a factor unequal one and spread by an integer factor larger than one; and

35 means for establishing the rhythm information of the audio signal by using the postprocessed rhythm raw-information of the audio signal.

10. Method for analyzing an audio signal with regard to rhythm information of the audio signal by using an autocorrelation function, comprising:

- 5 examining the audio signal with regard to a periodicity in the audio signal, to obtain rhythm raw-information for the audio signal, wherein a delay is associated to a peak of the autocorrelation function;
- 10 postprocessing the rhythm raw-information for the audio signal by the autocorrelation function, to obtain postprocessed rhythm raw-information for the audio signal, so that in the postprocessed rhythm raw-information a signal portion is added at an integer fraction of a delay,
- 15 to which an autocorrelation function peak is associated; and

20 establishing the rhythm information of the audio signal by using the postprocessed rhythm raw-information of the audio signal.

11. Method for analyzing an audio signal with regard to rhythm information of the audio signal by using an autocorrelation function, comprising:

- 25 examining the audio signal with regard to a periodicity in the audio signal, to obtain rhythm raw-information for the audio signal, wherein a delay is associated to a peak of the autocorrelation function;
- 30 postprocessing the rhythm raw-information for the audio signal determined by the autocorrelation function, to obtain postprocessed rhythm raw-information for the audio signal, by subtracting a version of the rhythm raw-information weighted with a factor unequal one and spread by an integer factor larger than one; and

establishing the rhythm information of the audio signal by using the postprocessed rhythm raw-information of the audio signal.